What is claimed is:

1. A stage assembly that is adapted to move a device relative to a stage base, the stage assembly comprising:

a stage adapted to retain the device;

a stage mover assembly connected to the stage, the stage mover assembly moving the stage with at least two degrees of freedom and generating reaction forces in at least two degrees of freedom; and

a reaction mass assembly coupled to the stage mover assembly, the reaction mass assembly being adapted to reduce the reaction forces in at least two degrees of freedom that are transferred to the stage base.

2. The stage assembly of claim 1 wherein the stage mover assembly moves the stage with three degrees of freedom and the reaction mass assembly is adapted to reduce the reaction forces in the three degrees of freedom that are transferred to the stage base.

3. The stage assembly of claim 2 wherein the reaction mass assembly is adapted to reduce reaction forces along an X axis, along a Y axis and about a Z axis.

4. The stage assembly of claim 1 wherein the reaction mass assembly is adapted to reduce reaction forces along an X axis and along a Y axis.

5. The stage assembly of claim 1 wherein the reaction mass assembly is adapted to reduce reaction forces along an X axis and about a Z axis.

6. The stage assembly of claim 1 wherein the reaction mass assembly includes an X reaction component that moves relative to the stage base in the two degrees of freedom.

7. The stage assembly of claim 6 wherein the X reaction component moves relative to the stage base with three degrees of freedom.

8. The stage assembly of claim 6 wherein the stage mover assembly comprises an X stage mover that moves the stage along an X axis, the X stage mover being coupled to the X reaction component so that movement of the stage by the X stage mover results in movement of the X reaction component along the X axis.

9. The stage assembly of claim 8 wherein the stage mover assembly comprises a Y stage mover that moves the stage along a Y axis, the Y stage mover being coupled to the X reaction component so that movement of the stage by the Y stage mover results in movement of the X reaction component along the Y axis .

10. The stage assembly of claim 1 further comprising a reaction mover assembly that adjusts the position of the reaction mass assembly relative to the stage base along an X axis.

11. The stage assembly of claim 10 wherein the reaction mover assembly adjusts the position of the reaction mass assembly relative to the stage base along a Y axis.

12. The stage assembly of claim 11 wherein the reaction mover assembly adjusts the position of the reaction mass assembly relative to the stage base about a Z axis.

13. The stage assembly of claim 1 wherein the reaction mass assembly includes an X reaction component and a Y reaction component that are coupled to the stage mover assembly, wherein the X reaction component moves relative to the Y reaction component along an X axis, and wherein the X reaction component and the Y reaction component move concurrently along a Y axis relative to the stage base.

14. The stage assembly of claim 13 further comprising a reaction mover assembly that adjusts the position of the X reaction component relative to the Y reaction component along the X axis.

15. The stage assembly of claim 14 wherein the reaction mover assembly adjusts the position of the Y reaction component and the X reaction component relative to the stage base along the Y axis.

16. The stage assembly of claim 15 wherein the reaction mover assembly adjusts the position of the Y reaction component and the X reaction component relative to the stage base along the X axis and about a Z axis.

17. The stage assembly of claim 13 wherein the X reaction component includes a first X reaction mass and a second X reaction mass that move independently along the X axis relative to the Y reaction component.

18. The stage assembly of claim 13 further comprising a reaction mover assembly that adjusts the position of the Y reaction component and the X reaction component relative to the stage base along the Y axis.

19. The stage assembly of claim 18 wherein the reaction mover assembly adjusts the position of the Y reaction component and the X reaction component relative to the stage base along the X axis and about a Z axis.

20. The stage assembly of claim 13 further comprising a mass guide assembly that allows the X reaction component to move relative to the Y reaction component along the X axis and inhibits movement of the X reaction component relative to the Y reaction component along the Y axis.

21. The stage assembly of claim 13 wherein the X reaction component includes a pair of spaced apart X reaction masses and the Y reaction component includes a generally planar shaped reaction base.

22. The stage assembly of claim 13 wherein the X reaction component includes a pair of spaced apart X reaction masses and the Y reaction component includes a pair of spaced apart Y reaction masses.

23. The stage assembly of claim 22 further comprising a mass guide assembly that connects the X reaction masses to the Y reaction masses, allows the X reaction masses to move independently relative to the Y reaction masses along the X axis and inhibits movement of the X reaction masses relative to the Y reaction masses along the Y axis.

24. The stage assembly of claim 22 further comprising a reaction guide assembly that allows the Y reaction masses to move relative to the stage base along the Y axis and inhibits movement of the Y reaction masses along the X axis.

25. The stage assembly of claim 22 further comprising a reaction mover assembly that adjusts the position of the X reaction masses relative to the Y reaction masses along the X axis.

26. The stage assembly of claim 25 wherein the reaction mover assembly adjusts the position of the Y reaction masses and the X reaction masses relative to the stage base along the Y axis.

27. The stage assembly of claim 13 wherein the X reaction component includes a pair of spaced apart X reaction masses and the Y reaction component includes a reaction frame.

28. The stage assembly of claim 27 further comprising a mass guide assembly that connects the X reaction masses to the reaction frame, allows the X reaction masses to move independently relative to the reaction frame along the X axis and inhibits movement of the X reaction masses relative to the reaction frame along the Y axis.

29. The stage assembly of claim 28 further comprising a reaction guide assembly that allows the reaction frame to move relative to the stage base along the Y axis and inhibits movement of the reaction frame along the X axis.

30. The stage assembly of claim 28 further comprising a reaction mover assembly that adjusts the position of the X reaction masses relative to the reaction frame along the X axis.

31. The stage assembly of claim 30 wherein the reaction mover assembly adjusts the position of the reaction frame and the X reaction masses relative to the stage base along the Y axis.

32. The stage assembly of claim 28 wherein the reaction frame is adapted to move relative to the stage base along the X axis, along the Y axis and about the Z axis.

33. The stage assembly of claim 32 further comprising a reaction mover assembly that adjusts the position of the X reaction masses relative to the reaction frame along the X axis.

34. The stage assembly of claim 32 further comprising a reaction mover assembly that adjusts the position of the reaction frame and the X reaction masses relative to the stage base along the X axis, along the Y axis and about the Z axis.

35. The stage assembly of claim 1 wherein the stage includes a device table having an upper table component and a lower table component, the upper and lower table components being movable relative to the stage base with at least two degrees of freedom, the upper table component being movable relative to the lower table component with at least three degrees of freedom.

36. The stage assembly of claim 35 wherein the upper table component is movable relative to the lower table component with at least six degrees of freedom.

37. An exposure apparatus including the stage assembly of claim 1.

38. A device manufactured with the exposure apparatus according to claim 37.

39. A wafer on which an image has been formed by the exposure apparatus of claim 37.

40. A stage assembly that is adapted to move a device relative to a stage base, the stage assembly comprising:

a stage adapted to retain the device;

a stage mover assembly connected to the stage, the stage mover assembly moving the stage along an X axis and along a Y axis and generating reaction forces along the X axis and along the Y axis; and

a reaction mass assembly coupled to the stage mover assembly, the reaction mass assembly being adapted to reduce the reaction forces along the X axis and along the Y axis, the reaction mass assembly including a X reaction component that moves relative to the stage base along the X axis and along the Y axis.

41. The stage assembly of claim 40 wherein the X reaction component moves relative to the stage base about a Z axis.

42. The stage assembly of claim 40 wherein the stage mover assembly comprises an X stage mover that moves the stage along the X axis, the X stage mover being coupled to the X reaction component so that movement of the stage by the X stage mover results in movement of the X reaction component along the X axis.

43. The stage assembly of claim 42 wherein the stage mover assembly comprises a Y stage mover that moves the stage along the Y axis, the Y stage mover being coupled to the X reaction component so that movement of the stage by the Y stage mover results in movement of the X reaction component along the Y axis.

44. The stage assembly of claim 40 wherein the reaction mass assembly includes a Y reaction component, the X reaction component moves relative to the Y reaction component along the X axis and the X reaction component and the Y reaction component move concurrently along the Y axis.

45. The stage assembly of claim 44 further comprising a reaction mover assembly that adjusts the position of the X reaction component relative to the Y reaction component along the X axis.

46. The stage assembly of claim 45 wherein the reaction mover assembly adjusts the position of the Y reaction component and the X reaction component relative to the stage base along the Y axis.

47. The stage assembly of claim 46 wherein the reaction mover assembly adjusts the position of the Y reaction component and the X reaction component relative to the stage base along the X axis.

48. The stage assembly of claim 47 wherein the reaction mover assembly adjusts the position of the Y reaction component and the X reaction component relative to the stage base about a Z axis.

49. The stage assembly of claim 44 wherein the X reaction component includes a first X reaction mass and a second X reaction mass that move independently along the X axis relative to the Y reaction component.

50. The stage assembly of claim 49 wherein the Y reaction component includes a generally planar shaped reaction base.

51. The stage assembly of claim 49 wherein the Y reaction component includes a pair of spaced apart Y reaction masses.

52. The stage assembly of claim 51 further comprising a mass guide assembly that connects the X reaction masses to the Y reaction masses, allows the X reaction masses to move independently relative to the Y reaction masses along the X axis and inhibits movement of the X reaction masses relative to the Y reaction masses along the Y axis.

53. The stage assembly of claim 52 further comprising a reaction guide assembly that allows the Y reaction masses to move relative to the stage base along the Y axis and inhibits movement of the Y reaction masses along the X axis.

54. The stage assembly of claim 51 further comprising a reaction mover assembly that adjusts the position of the X reaction masses relative to the Y reaction masses along the X axis.

55. The stage assembly of claim 54 wherein the reaction mover assembly adjusts the position of the Y reaction masses and the X reaction masses relative to the stage base along the Y axis.

56. The stage assembly of claim 49 wherein the Y reaction component includes a reaction frame.

57. The stage assembly of claim 56 further comprising a mass guide assembly that connects the X reaction masses to the reaction frame, allows the X reaction masses to move independently relative to the reaction frame along the X axis, and inhibits movement of the X reaction masses relative to the reaction frame along the Y axis.

58. The stage assembly of claim 57 further comprising a reaction guide assembly that allows the reaction frame to move relative to the stage base along the Y axis and inhibits movement of the reaction frame along the X axis.

59. The stage assembly of claim 58 further comprising a reaction mover assembly that adjusts the position of the X reaction masses relative to the reaction frame along the X axis.

60. The stage assembly of claim 59 wherein the reaction mover assembly adjusts the position of the reaction frame and the X reaction masses relative to the stage base along the Y axis.

61. The stage assembly of claim 57 wherein the reaction frame is adapted to move relative to the stage base along the X axis, along the Y axis and about the Z axis.

62. The stage assembly of claim 61 further comprising a reaction mover assembly that adjusts the position of the X reaction masses relative to the reaction frame along the X axis.

63. The stage assembly of claim 61 further comprising a reaction mover assembly that adjusts the position of the reaction frame and the X reaction masses relative to the stage base along the X axis, along the Y axis and about the Z axis.

64. The stage assembly of claim 40 wherein the stage includes a device table having an upper table component and a lower table component, the upper and lower table components being movable relative to the stage base with at least two degrees of freedom, the upper table component being movable relative to the lower table component with at least three degrees of freedom.

65. The stage assembly of claim 64 wherein the upper table component is movable relative to the lower table component with at least six degrees of freedom.

66. An exposure apparatus including the stage assembly of claim 40.

67. A device manufactured with the exposure apparatus according to claim 66.

68. A wafer on which an image has been formed by the exposure apparatus of claim 66.

69. A method for making a stage assembly that moves a device relative to a stage base, the method comprising the steps of:

providing a stage that retains the device;

connecting a stage mover assembly to the stage, the stage mover assembly moving the stage with at least two degrees of freedom and generating reaction forces in at least two degrees of freedom; and

coupling a reaction mass assembly to the stage mover assembly, the reaction mass assembly reducing the reaction forces in at least two degrees of freedom that are transferred to the stage base.

70. The method of claim 69 wherein the step of coupling a reaction mass assembly includes the step of providing an X reaction component that moves relative to the stage base with two degrees of freedom.

71. The method of claim 70 wherein the step of providing an X reaction component includes providing an X reaction component that moves relative to the stage base with three degrees of freedom.

72. The method of claim 70 further comprising the step of providing an X stage mover adapted to move the stage along an X axis, the X stage mover being coupled to the X reaction component so that movement of stage by the X stage mover results in movement of the X reaction component along the X axis.

73. The method of claim 72 including the step of providing a Y stage mover adapted to move the stage along a Y axis, the Y stage mover being coupled to the X reaction component so that movement of the stage by the Y stage mover results in movement of the X reaction component along the Y axis.

74. The method of claim 69 wherein the step of providing a reaction mass assembly includes the step of providing an X reaction component and a Y reaction component, wherein the X reaction component moves relative to the Y reaction component along an X axis, and wherein the X reaction component and the Y reaction component move concurrently along a Y axis.

75. The method of claim 74 including the step of providing a reaction mover assembly that adjusts the position of the X reaction component relative to the Y reaction component along the X axis.

76. The method of claim 74 including the step of providing a reaction mover assembly that adjusts the position of the Y reaction component and the X reaction component concurrently relative to the stage base along the Y axis.

77. The method of claim 74 including the step of providing a reaction mover assembly that adjusts the position of the Y reaction component and the X reaction component relative to the stage base along an X axis and about a Z axis.

78. The method of claim 74 including the step of providing a reaction mover assembly that adjusts the position of the X reaction component relative to the Y reaction component along the X axis, adjusts the position of the Y reaction component and the X reaction component relative to the stage base along the Y axis.

79. The method of claim 69 wherein the step of providing a reaction mass assembly includes the step of providing a first X reaction mass and a second X reaction mass that moves independently along an X axis.

80. The method of claim 79 wherein the step of providing a reaction mass assembly includes the step of providing a reaction frame that is coupled to the X reaction masses so that the reaction frame moves relative to the stage base along the X axis.

81. The method of claim 80 including the step of providing a reaction mover assembly that adjusts the position of each X reaction mass relative to the reaction frame along the X axis, and adjusts the position of the reaction frame and the X reaction masses relative to the stage base along the Y axis.

82. The method of claim 80 including the step of providing a reaction mass assembly that adjusts the position of the X reaction masses and the reaction frame relative to the stage base along the X axis and along the Y axis.

83. The method of claim 69 further comprising the step of providing a reaction mover assembly that adjusts the position of the reaction mass assembly relative to the stage base along the X axis.

84. The method of claim 69 further comprising the step of providing a reaction mover assembly that adjusts the position of the reaction mass assembly relative to the stage base along the X axis and along the Y axis.

85. A method for making an exposure apparatus that forms an image on a wafer, the method comprising the steps of:

providing an irradiation apparatus that irradiates the wafer with radiation to form the image on the wafer; and

providing the stage assembly made by the method of claim 69.

86. A method of making a wafer utilizing the exposure apparatus made by the method of claim 85.

87. A method of making a device including at least the exposure process: wherein the exposure process utilizes the exposure apparatus made by the method of claim 85.

88. A stage assembly that is adapted to move a device relative to a stage base, the stage assembly comprising:

a stage adapted to retain the device, the stage is movable on a guide face defined by the stage base;

a stage mover assembly connected to the stage, the stage mover assembly moving the stage with at least two degrees of freedom and generating reaction forces in at least two degrees of freedom;

a reaction mass assembly coupled to the stage mover assembly, the reaction mass assembly being adapted to reduce the reaction forces in at least two degrees of freedom that are transferred to the stage base; and

a reaction mover assembly disposed independently from the stage movers and connected to the reaction mass assembly, the reaction mover assembly adjusting the position of the reaction mass assembly relative to the stage base along an X axis.

89. A stage assembly that is adapted to move a device relative to a stage base, the stage assembly comprising:

a first stage adapted to retain a first device;

a second stage adapted to retain a second device;

a first stage mover assembly connected to the first stage, the first stage mover assembly moving the first stage with at least two degrees of freedom and generating reaction forces in at least two degrees of freedom;

a second stage mover assembly connected to the second stage, the second stage mover assembly moving the second stage with at least two degrees of freedom and generating reaction forces in at least two degrees of freedom;

a reaction mass assembly coupled to the first and the second stage mover assemblies, the reaction mass assembly being adapted to reduce the reaction forces in at least two degrees of freedom that are transferred to the stage base; and

a reaction mover assembly disposed independently from the first and the second stage movers and connected to the reaction mass assembly, the reaction mover assembly adjusting the position of the reaction mass assembly relative to the stage base along an X axis.